

CS20: Analysing PACE89 Mainline Data

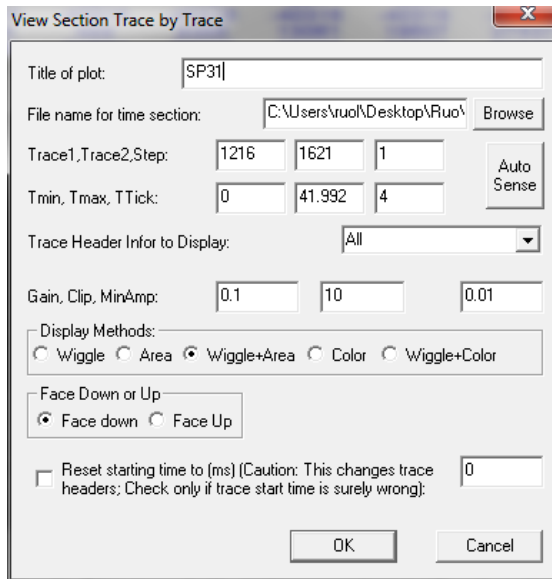
Use the trace header to determine the range of traces of each shot point within the complete data set file (file002.PACE89.segyPC.sgy)

Open up the header file and search the string “ 31 “ to find where SP31 starts. Then scroll down the header file to find which trace SP31 data ends.

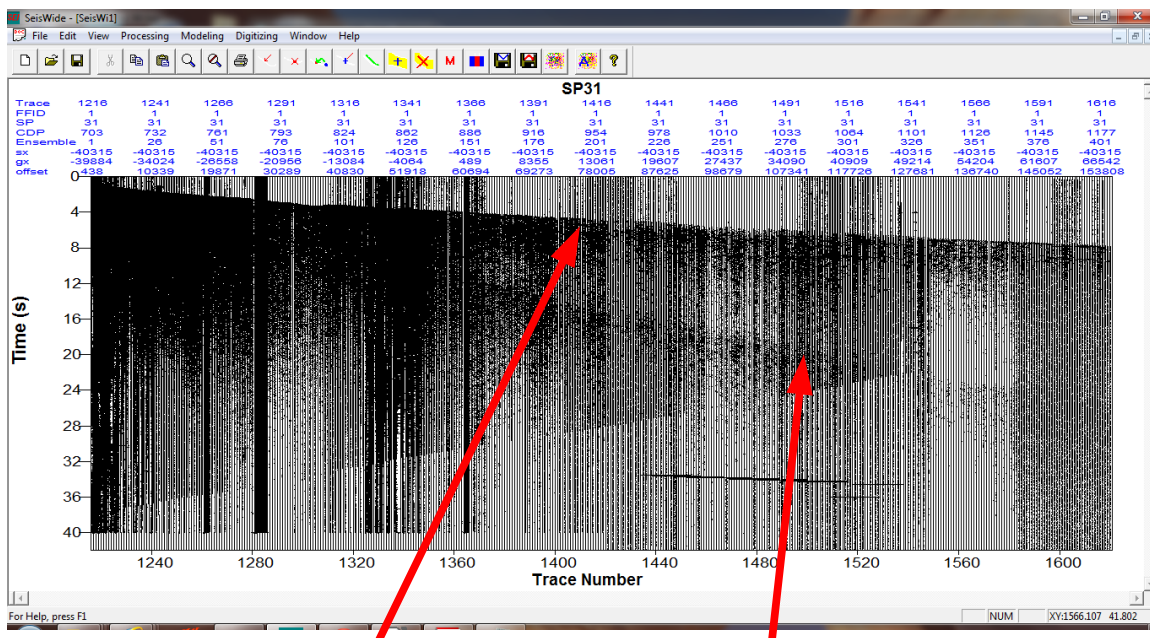
You should find:

SP31 starts at trace 1216 and ends at trace 1621.

From SeisWide, do a Time section by trace from file002PACE89.segyPC.sgy:

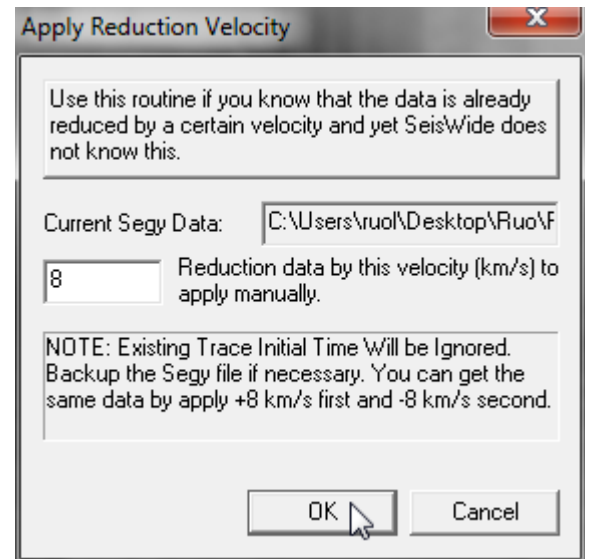
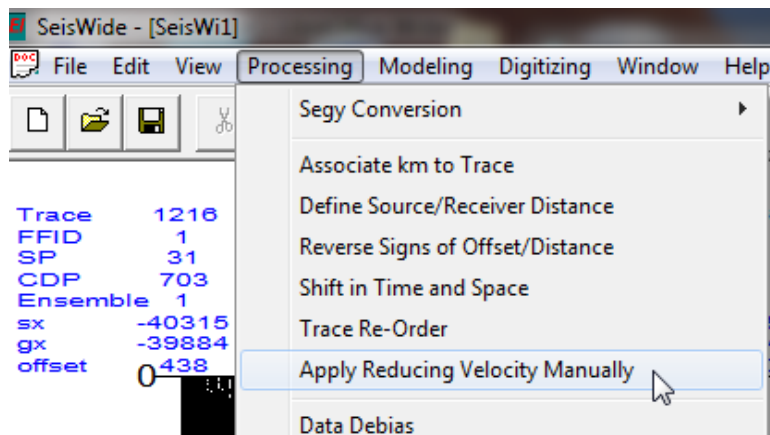


You should get something like this:

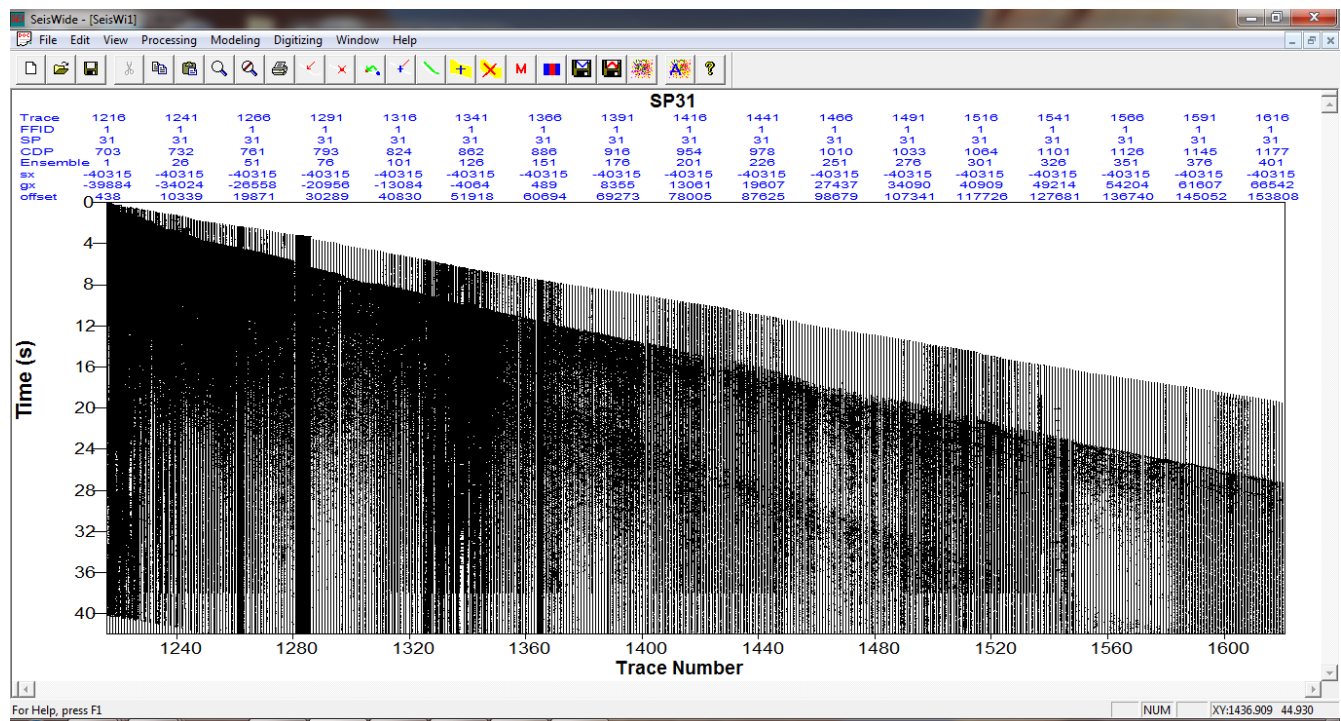


The first arrivals from the p-waves (Pg) as well as the s-waves are clearly visible.

To make the velocity analysis easier, we will unreduce the travel times:



You will now see the unrounded data:



You will need to plot the data by km next before digitizing!

Combined Parameter List

Common Parameters | Time or Depth Sections

Title of plot: SP31

Trace1, Trace2, Step: 1216 1621 1

Xmin, Xmax, XTick: 0 160 20

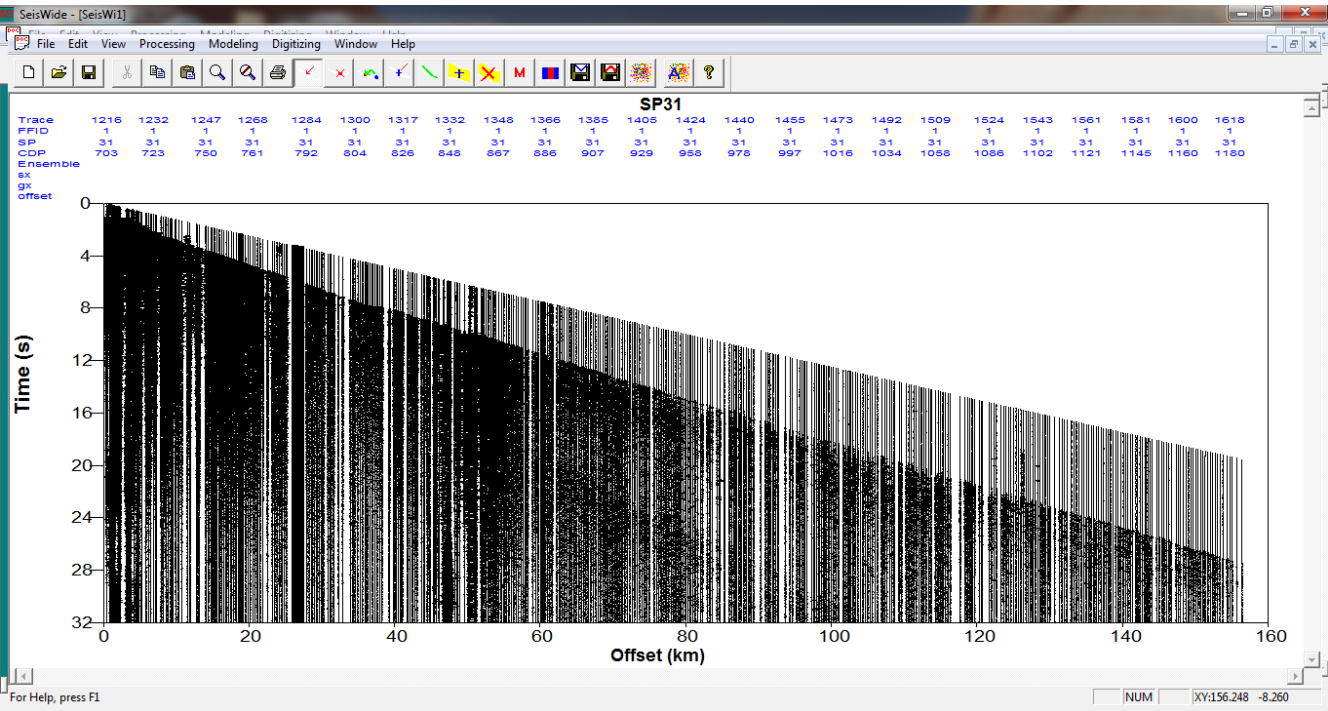
Gain, Clip, MinAmp: 0.1 10 0.01

Display Methods:
☐ Wiggle ☐ Area ☒ Wiggle+Area ☐ Color ☐ Wiggle+Color

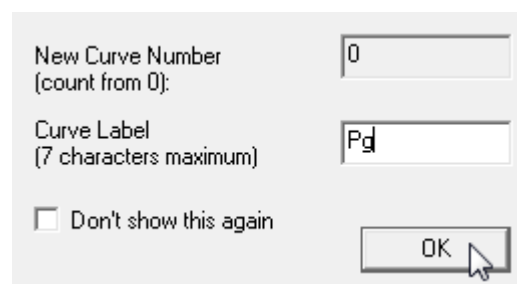
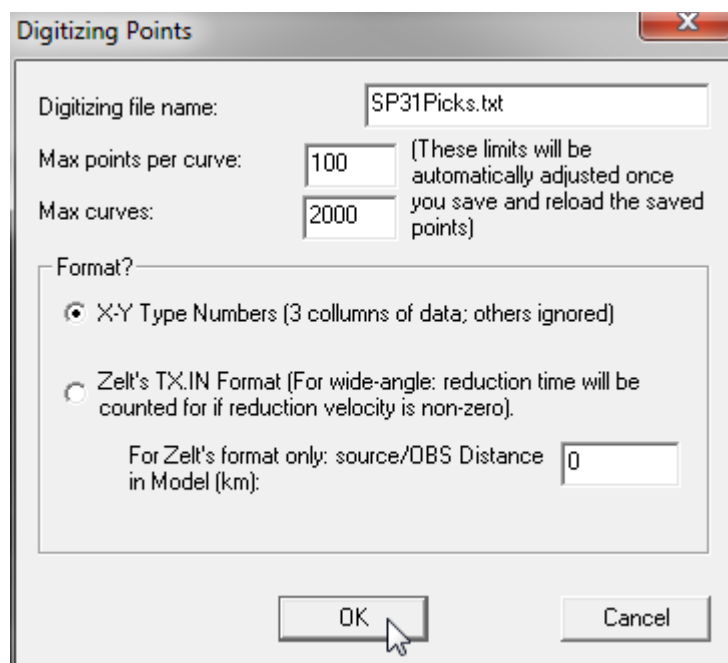
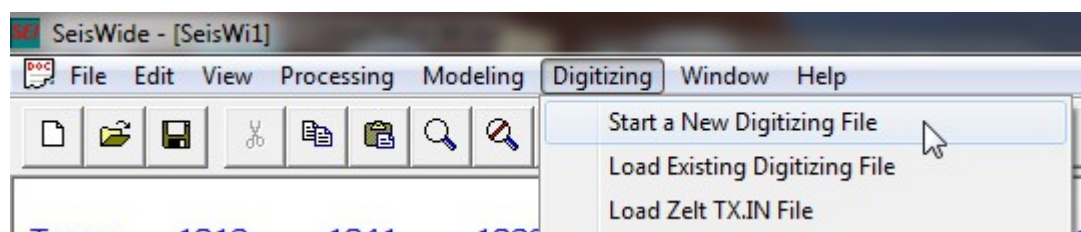
Face Down or Up
☒ Face down ☐ Face Up

☐ Distance/Offset increases monotonically with trace (check to speed up loading)

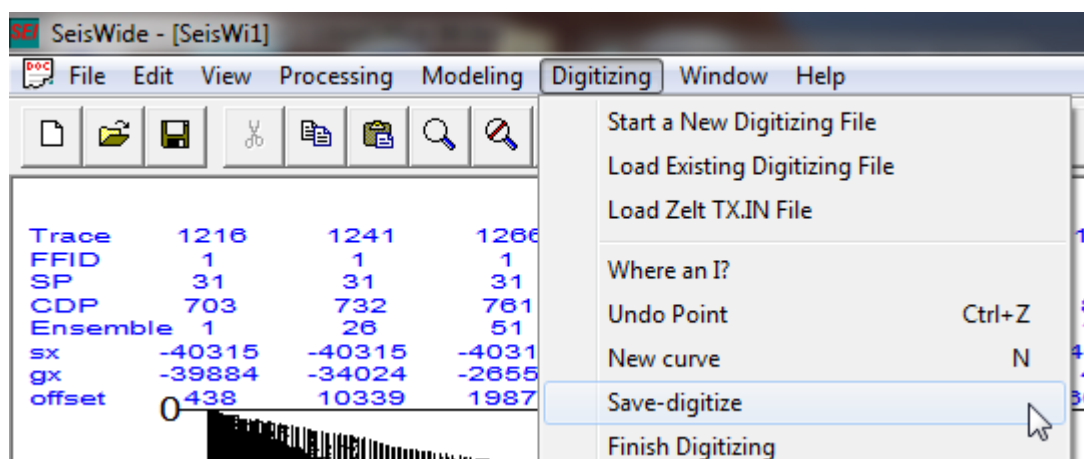
OK Cancel Apply Help



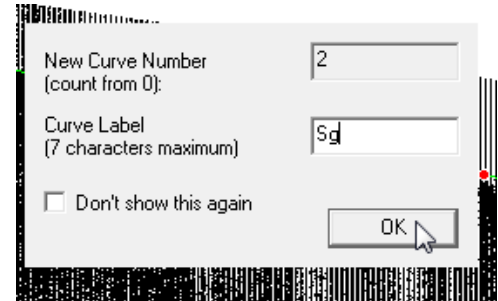
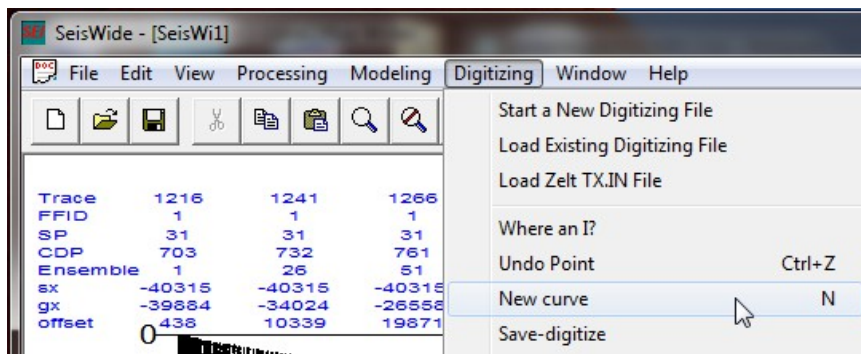
You will now start a new digitizing file:



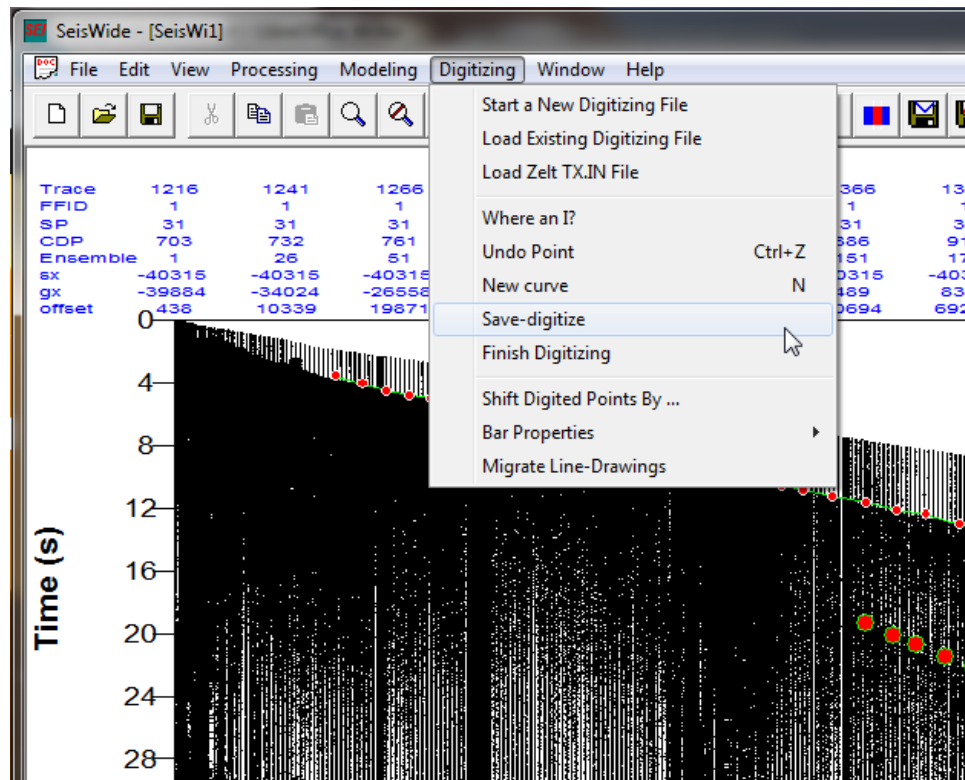
Pick the Pg data and then save your picks



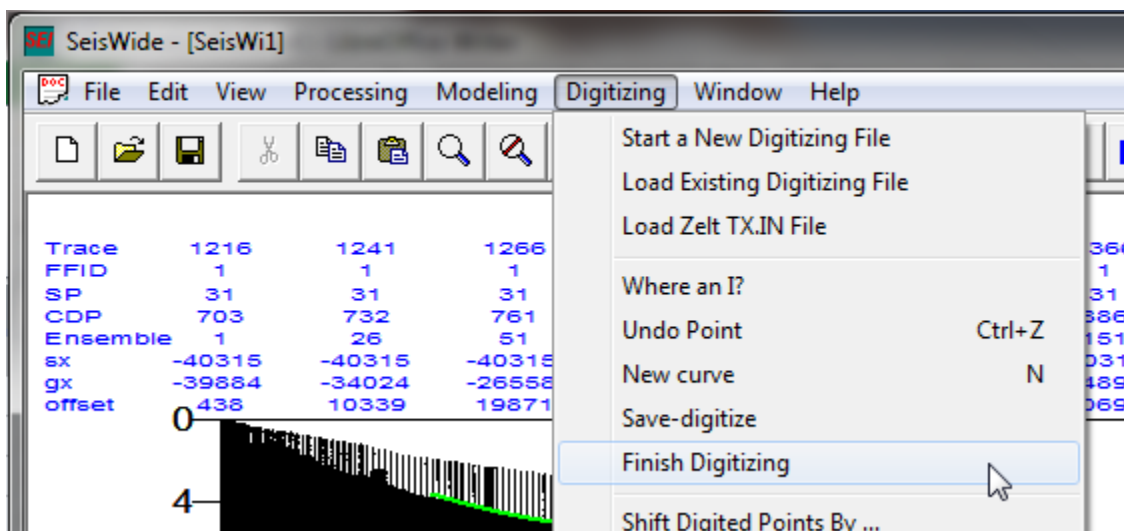
Next, pick the Sg data:



Pick the Sg data, then save your results

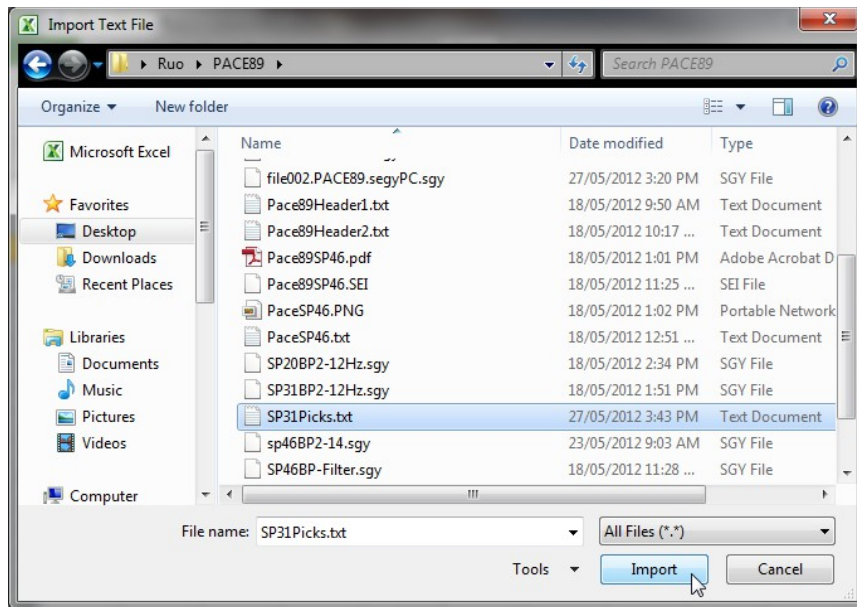
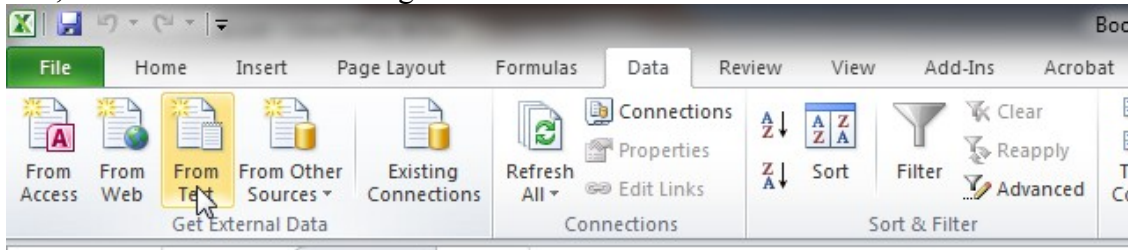


Finish digitizing:



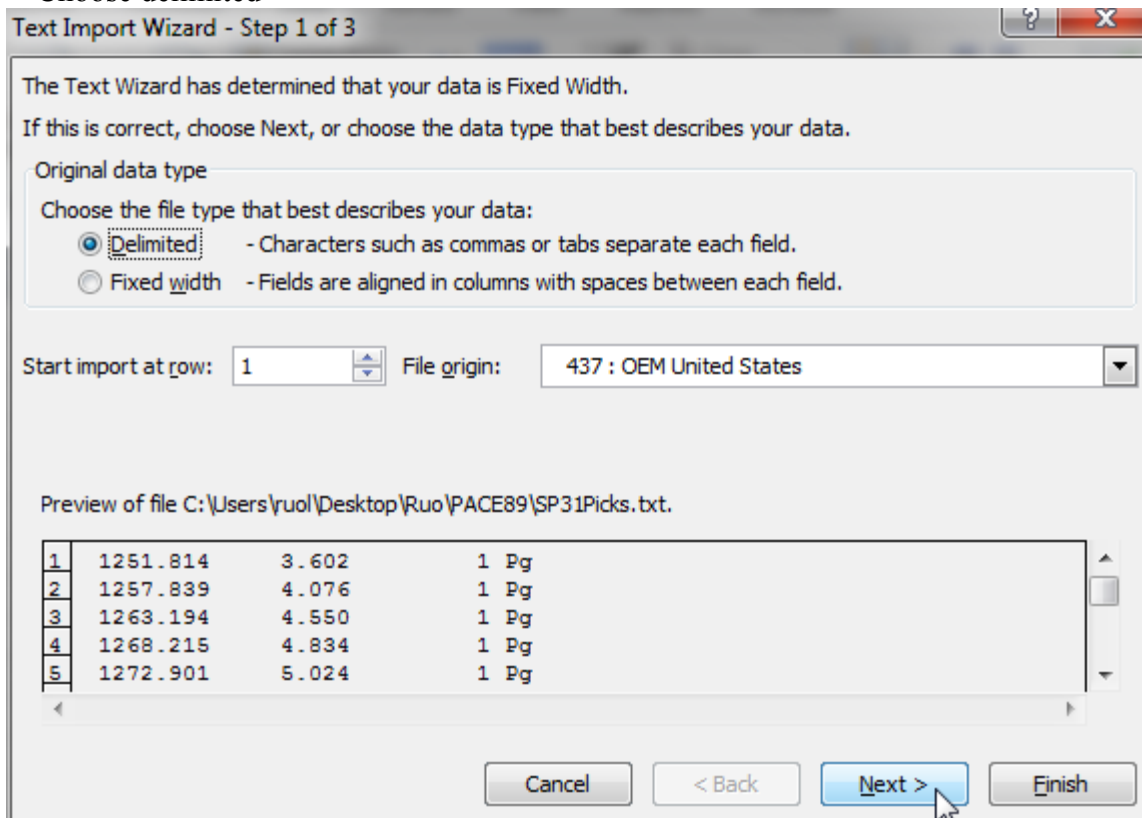
We will now open the data we saved in SP31Picks.txt and analyse it in Excel.

From Excel, click on the Data tab and get data from text



Find the pick file and import it

Choose delimited



delimited means the data columns are separated by some sort of character (tab, space, commas etc)

The data columns are separated by spaces:

Text Import Wizard - Step 1 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☐ Tab

☐ Semicolon

☐ Comma

☒ Space

☐ Other:

☒ Treat consecutive delimiters as one

Text qualifier:

Data preview

1251.814	3.602	1	Pg
1257.839	4.076	1	Pg
1263.194	4.550	1	Pg
1268.215	4.834	1	Pg
1272.901	5.024	1	Pg

Cancel < Back Next > Finish

Text Import Wizard - Step 1 of 3

This screen lets you select each column and set the Data Format.

Column data format

☒ General

☐ Text

☐ Date: DMY

☐ Do not import column (skip)

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

Advanced...

Data preview

General	General	General	General	General
1251.814	3.602	1	Pg	
1257.839	4.076	1	Pg	
1263.194	4.550	1	Pg	
1268.215	4.834	1	Pg	
1272.901	5.024	1	Pg	

Cancel < Back Next > Finish

Import Data

Where do you want to put the data?

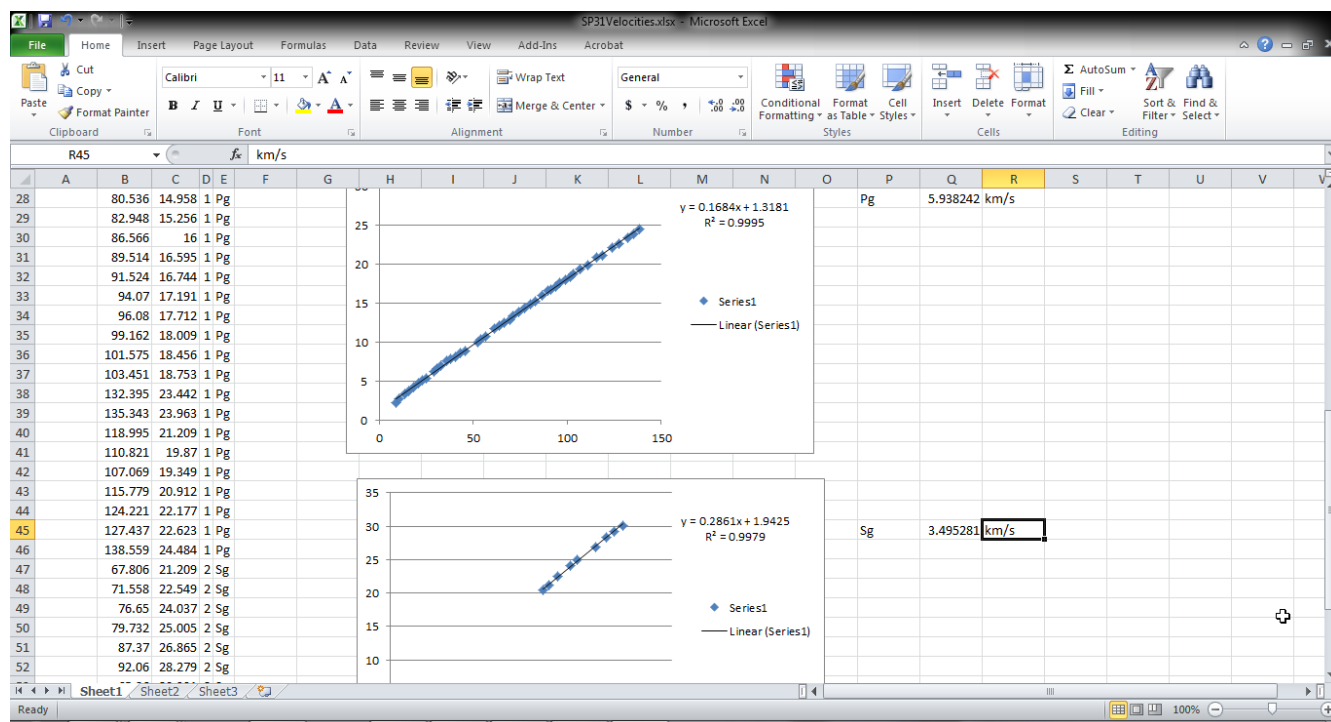
☒ Existing worksheet:

☐ New worksheet

Properties... OK Cancel

In Excel, You will need to graph the Pg and Sg data as a scatter graph, then insert a trend line for each. The slope of the graph is the slowness. To find the speed of the waves, you will need to take the reciprocal of the slowness.

You should get results similar to



Pg 5.9 km/s

Sg 3.5 km/s